Understanding Students' Future Intention to Engage in Sustainability Accounting: The Case of Malaysia and the Philippines

Abstract

Purpose - The study investigates whether the level of sustainability concerns of Higher Education Institutions (HEIs) in Malaysia and the Philippines is positively associated with accounting students' intentions to engage in sustainability accounting through its effect on students' attitude, subjective norm, and perceived behavioural control regarding environmental sustainability practices.

Design/methodology/approach - This empirical study relies on a structural equation model computed using data collected through a questionnaire and data collected from the HEIs websites.

Findings - The findings show that the willingness to engage in sustainability accounting is determined by students' subjective norm and perceived behavioural control, but it is not determined by attitude regarding environmental sustainability practices. We also found that the greater the concern with sustainability of the HEI in which a student is enrolled, the greater his/her attitude, subjective norm, and perceived behavioural control towards environmental sustainability, and, indirectly, the greater his/her intention to engage in sustainability accounting.

Originality - These findings add to the literature on higher education and sustainability accounting by highlighting the importance of the HEIs sector in promoting sustainability policies and practices, in acting as role models regarding sustainability issues, and in preparing students for building a sustainable society.

Keywords: Sustainability; Sustainability Accounting; Higher Education; Theory of Planned Behaviour; Accounting education; Emerging countries; Malaysia; Philippines.

Paper Type: Research Paper

1. Introduction

Higher Education Institutions (HEIs) play a key role in the development of society (Alonso-Almeida *et al*., 2015). They are no longer assessed solely based on their potential to provide quality education and research. Other factors, including their commitment to the progress of society, are now also expected from HEIs (Nejati and Nejati, 2013), which have been identified as an important player for a culture of sustainability in society (Aleixo, 2019).

In the Newly Industrialised countries (NICs), including Malaysia and the Philippines, HEIs are expected to play a substantial role in terms of providing the manpower required to drive economic growth sustainably. The NICs are shifting from primary sectors to modern sectors (Attiah, 2019) and are facing enormous challenges, namely the need for implementing successful sustainability practices (Garbie, 2017). Being two island countries, Malaysia and the Philippines are particularly more fragile and sensitive to environmental challenges that threaten ecosystems (Yang *et al*., 2020) and are facing the challenge of balancing their rich natural resources with rapid economic growth.

Despite some policies aiming at promoting sustainable development in these countries, sustainability is still considered something for the future and the adoption of sustainability practices remains a challenge (Isa *et al*., 2017; Lu and Castka, 2009; Martinico-Perez *et al*., 2018). Sustainability accounting, to be defined below, may constitute a valuable vehicle to ensure that companies develop sustainability practices.

Sustainability accounting consists of the process of collecting, analysing, and communicating sustainability information, enabling the improvement of corporate sustainability management. Companies use sustainability accounting for internal decision-making and to build new policies that have an impact on the company`s performance at economic, ecological, and social levels (Gray *et al*., 2014).

Sustainability accounting and reporting in Malaysia and the Philippines is not extensive. In Malaysia, there is an increased need to understand the reason for publishing a sustainability report (Johari and Komathy, 2019). Malaysian government requires all listed firms to disclose their sustainability activities in annual reports since 2007, but the implementation is still not constant among firms (Johari and Komathy, 2019). Although the initiatives from government and non-government organizations, the level of Sustainability Reporting in Malaysia is still poor in quality and falls behind compared to other countries (Aziz and Bidin, 2017). The Philippines began the sustainability reporting journey recently. The Securities and Exchange Commission released a Memorandum entitled Sustainability Reporting Guidelines for Publicly-Listed Companies, specifying the procedure for sustainability reporting in the Philippines in 2019 (Villacorte, B. and Antipala, Y., 2021).

In the psychology literature, higher education is shown to be a factor that strongly influences human development change (Robbins, 1998). HEIs students show reliable patterns of change involving attitudinal, cognitive, psychosocial, and value formation and growth (Pascarella and Terenzini, 1991). As students progress through the university system, they undergo a socialization process, which includes changes in attitudes and values (Robbins, 1998).

This study investigates whether the level of sustainability concern of HEIs in Malaysia and the Philippines exerts an indirect influence on accounting students' intentions to engage in sustainability accounting through its effect on three psychosocial factors (attitude, subjective norm, and perceived behavioural control regarding environmental sustainability practices). There is a stream of literature relying on the Theory of Planned Behaviour (TPB) that provides evidence of the effect of the psychosocial factors attitude, subjective norm, and perceived behavioural control on students' intention to engage in sustainability practices (e.g., Swaim *et al.*, 2014; Yazdanpanah and Forouzani, 2015; Hasan *et al.*, 2015). Although sustainability accounting has

become an increasingly important topic in business and academia (see: Lamberton, 2005; Adams and Larrinaga, 2007; Russell and Thomson, 2009; Gray, 2010; O'Dwyer and Unerman, 2016; Chung and Cho, 2018), only a few studies address the effect of psychosocial factors like attitude, subjective norm and perceived behavioural control on the intention to engage in sustainability accounting, and they are focused on professionals' intentions rather than on students' intentions (Thoradeniya *et al*., 2015; Kwakye *et al*., 2018). Based on the TPB, we hypothesise that HEIs accounting students' attitudes, subjective norms, and perceived behavioural control regarding environmental sustainability practices affect their intention to engage in sustainability accounting. Furthermore, we extend this theory by arguing that the HEIs level of sustainability concern has an indirect influence on accounting students' intentions to engage in sustainability accounting through its effect on their attitudes, subjective norms, and perceived behavioural control regarding environmental sustainability practices.

The HEIs level of sustainability concern is viewed here as the extent to which HEIs include sustainable development principles, as defined by the Brundtland Report (WCED, 1987), in their strategy and operations. Considering the TBP framework (Ajzen, 1991), the students' attitudes, subjective norms, and perceived behavioural control regarding environmental sustainability practices may be viewed, respectively, as the degree to which the students have a favourable or unfavourable evaluation or appraisal of environmental sustainability practices, the students' perception of the social pressure to engage or not engage in environmental sustainability practices, and the students' perceived ease or difficulty in performing environmental sustainability practices.

The empirical design relies on a structural equation model. The data on the TPB variables (students' attitude, subjective norms, and perceived behavioural control regarding environmental sustainability practices, and the intention to engage in sustainability accounting) were collected through a questionnaire answered by eight HEIs in Malaysia and the Philippines. The variable

regarding the HEIs level of sustainability concern was computed based on a content analysis of the web pages of the collaborating institutions. The specific measures are based on Velazquez *et al*. (2006), Nejati and Nejati (2013), Labanauskis (2017), and Aleixo *et al*. (2018b), who give insights into the key dimensions of a sustainable university.

This study adds to the literature on the determinants of sustainability accounting (e.g., Ali et al., 2017; Orazalin and Mahmood, 2019) by providing evidence on the psychosocial factors that may influence the intention to engage in it, based on a theory that is rarely used in this stream of research: the TPB. While only a few studies analyse this issue - and are mainly focused on professionals' intentions, including managers and accountants (e.g., Thoradeniya *et al*., 2015; Kwakye *et al*., 2018) – we focus on students' intentions to engage in sustainability accounting, which allows us to control for possible biases caused by factors that can influence active professionals but not future ones (students), such as, for example, factors related to the culture of the employing organisations.

We also contribute to the literature about the influence of psychological factors on the intentions to engage in sustainability accounting or practices (e.g., Swaim *et al*., 2014; Thoradeniya *et al*., 2015; Liobikienė *et al*., 2016; Kwakye *et al*., 2018; Judge *et al*., 2019) by showing that only perceived behavioural control (both subjective norm and perceived behavioural control) has a significant influence on the intention of Malaysian (Philippines) students to engage in sustainability accounting. The attitude seems not to be important in these countries. This finding contradicts earlier studies conducted in developed countries showing that attitude is the strongest influence on students' intentions to engage in sustainability practices (Swaim *et al*., 2014), which can signal a difference between developed and developing countries regarding the adoption of sustainability practices.

This study also adds to the higher education literature (e.g., Pascarella and Terenzini 1991;

2016; Pascarella *et al*., 2016; Robbins, 1998) by showing empirically that the greater the concern with sustainability of the HEI, the higher the students' attitude, subjective norm, and perceived behavioural control towards environmental sustainability, and, indirectly, the higher his/her intention to engage in sustainability accounting.

Our findings are of special importance for Malaysia and the Philippines, where HEIs are currently implementing a set of massive changes aiming to provide higher education aligned with international standards (Rosaroso *et al*., 2015; Dumanig and Symaco, 2020), which may include the adoption and/or the improvement of sustainability policies. These HEIs are expected to play an important role in ensuring the human capital development required to face the challenge of balancing the rich natural resources with the rapid economic growth that characterises these NICs. Undergraduate accounting students are the professionals of the future and thus, capable of making a difference by having an active role in accounting for firms' sustainability practices. At a global level, there is a growing interest in developing a better understanding of the benefits of higher education, both to individuals and to society, and pressure is placed on HEIs to deliver sustainability initiatives alongside their long-standing social responsibility commitments. Our study contributes to this discussion by revealing the importance of having HEIs promoting sustainability practices and acting as role models regarding sustainability issues, thereby preparing students for building a sustainable society.

The remainder of the paper is organised as follows. Sections 2 and 3 present the literature review and hypotheses. Section 4 describes the research design and section 5 presents the empirical results. Section 6 provides concluding remarks and policy implications.

2. Background

2.1. Theory of Planned Behaviour

The theoretical framework used in this study is based on the Theory of Planned Behaviour (TPB), which is one of the widely-recognised theories applied to predict and explain human behaviour.

This theory was developed as an extension of the Theory of Reasoned Action (Fishbein and Ajzen, 1975), a social-psychological model claiming that a person's actual behaviour in performing a certain action is directly guided by his behavioural intention, which is jointly determined by the attitude and subjective norms towards that behaviour. The TPB extends the Theory of Reasoned Action by considering perceived behavioural control as an additional variable that predicts behavioural intentions. Therefore, the TBP postulates three conceptually independent determinants of behavioural intentions: the individual's attitude, subjective norms, and perceived behavioural control (Ajzen, 1991).

The individual's attitude towards the behaviour refers to the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question, the subjective norms refer to the individual's perception of the social pressure to perform or not perform the behaviour, and the perceived behavioural control refers to the perceived ease or difficulty in performing the behaviour (Ajzen, 1991). Therefore, the attitude towards a behaviour depends on the personal feeling about that specific behaviour, the subjective norm depends on the influence of referent groups, like family, friends, professors, business leaders, and media regarding the behaviour, and the perceived behavioural control depends on the individual's belief in its ability to engage in the behaviour. The relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations (Ajzen, 1991).

2.2. Effect of HEIs on students' attitudes and behaviour

There is a stream of literature analysing the role of higher education in human developmental

change. Pascarella and Terenzini (1991; 2005) and Pascarella *et al*. (2016) perform well-known reviews of the empirical research that provides evidence about how students change and benefit as a result of attending HEIs.

Robbins (1998) argues that as students progress through the university system and acquire more status within that culture, they become increasingly like the individuals in the dominant group, the faculty. To be successful within the academic community, students adapt by developing not only similar intellectual information, but also similar values and attitudes, which means that students eventually come to model values that university faculty embody over time. Additionally, Robbins (1998) provides empirical evidence that students and entry-level faculty undergo a socialisation process, which includes changes in attitudes and values consistent with the established tenured faculty.

More recent studies provide evidence on the effect of HEIs on students' attitudes and behaviour. Aziz (2016) relies on the TPB to hypothesise and show empirically that the HEIs influence on students' attitudes regarding visiting a country led to their behavioural intention to visit that country. Reyes-Cruz *et al*. (2019) provide empirical evidence that higher education has a strong influence on the entrepreneurial attitudes of undergraduate students. Alves and Raposo (2010) show that the image attached to an HEI greatly influences students' satisfaction and loyalty. Thus, prior literature sheds light on the influence of HEIs on one of the three determinants of the behavioural intentions postulated by the TPB, the individual's attitude. However, more research is needed regarding the influence of HEIs on the other two psychological factors that according to the TPB predict behavioural intentions.

Additionally, little is known about the specific effect of HEIs sustainability concerns and/or practices on students' attitudes and behaviour towards sustainability issues. Among the few exceptions, some studies show that the sustainability policy and practices of the HEIs positively

influence students' satisfaction (Sánchez-Hernández and Mainardes, 2016; Vásquez *et al*., 2016; Gallardo-Vásquez *et al.,* 2020), while others show that sustainability activities of the HEIs substantially influence employees' attitudes and behaviour, as work engagement or job satisfaction (Low, 2020; Mascarenhas *et al.,* 2020). Finally, based on the TPB, Lee *et al.* (2017) show that the introduction of an environmental sustainability intervention into a managerial accounting course at a US university induced changes in students' environmental intentions and behaviour. Thus, it appears that HEIs sustainability policies and practices may influence students' and employees' psychological factors. However, we would benefit from specific knowledge and understanding of the influence of HEIs sustainability concerns on students' attitude, subjective norms, and perceived behavioural control regarding sustainability issues.

We address this gap by analysing the effect of HEIs sustainability concerns, in the broad definition given earlier (and not specifically restricted to academic curricula), on accounting students' attitudes, subjective norms, and perceived behavioural control regarding environmental sustainability issues.

2.3. Effect of psychosocial factors on the intention to engage in sustainability practices and/or accounting

A stream of literature relying on TPB (e.g., Swaim *et al*., 2014; Yazdanpanah and Forouzani, 2015; Hasan *et al*., 2015; Liobikienė *et al*., 2016; Judge *et al*., 2019) investigates the effect of psychosocial factors, namely attitude, subjective norm, and perceived behavioural control, on the intention to engage in sustainability practices. Some of these studies examine students' intentions.

Swaim *et al*. (2014) explored the influence of US students' attitudes, subjective norms, and perceived behavioural control on environmental sustainability intention and behaviour, and

found that students' attitudes account for the strongest influence on environmental sustainability intention. Yazdanpanah and Forouzani (2015) showed that students' attitude is the only predictor of the intention to purchase organic food in Iran. However, Hasan *et al.* (2015) found that Malaysian students perceived behavioural control as the factor with the highest relation with intention to reduce plastic consumption, when compared to attitude and social norms. Thus, it appears that students' attitudes are the main determinant of behavioural intentions about sustainability in the US and Iran, while in Malaysia, students' behavioural intentions depend heavily on their ability (and access to resources) to engage in the behaviour. It seems that the psychosocial predictors of the intentions to engage in sustainable practices are sensitive to the country where students are located (predominance of the psychosocial factor "attitude" in the US and Iran *versus* predominance of the psychological factor "perceived behavioural control" in Malaysia).

Additionally, while many studies have analysed students' intentions, others directly examine consumers' intentions and/or behaviour. Liobikienė *et al*. (2016) showed that in the EU countries subjective norms have the biggest influence on purchasing green products. Judge *et al*. (2019) found similar results, by showing that the strongest predictor of Australian homebuyers' willingness to pay for a sustainability certification were subjective norms and familiarity with current sustainability certifications. A possible explanation for this finding may be that purchasing products often involves considering other people's views (Judge *et al.*, 2019). Thus, it appears that the psychosocial predictors of the intentions to engage in sustainable practices are also sensitive to the nature of the individuals that are asked about their intentions (students *versus* consumers).

In addition to sustainability practices, sustainability accounting has become an increasingly important topic. Sustainability accounting may lead to several corporate benefits necessary for long-term value creation, including higher firm performance (Flammer, 2015), higher firm

value (Plumlee *et al*., 2015), and/or higher stock returns (Flammer, 2013). Nevertheless, despite the importance of sustainability accounting, there is a lack of studies on the effect of attitudes, subjective norms, and perceived behavioural control on the intentions to engage in sustainability accounting. Only a few studies address this issue, and they are focused on professionals' intentions (Thoradeniya *et al*., 2015; Kwakye *et al*., 2018).

Thoradeniya *et al*. (2015) examined the influence of Sri Lankan managers' psychological factors on sustainability accounting and found that managers' attitudes, subjective norms, and capacity to control sustainability accounting behaviour directly influence the intention to engage in sustainability accounting, and indirectly influence behaviour. Kwakye *et al*. (2018) found slightly different results, showing that only subjective norm and perceived behavioural control (but not attitude) influence the professionals' intention to engage in sustainability accounting in Ghana. Therefore, differences can also be found regarding the psychosocial factors that predict professionals' intentions to engage in sustainability accounting.

These contradictory findings seem to be aligned with one of the assumptions of the TPB, namely that the relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations (Ajzen, 1991).

We add to this literature by focusing on the effect of students' (instead of professionals') attitudes, subjective norms, and perceived behavioural control on the intentions to engage in sustainability accounting. This allows us to avoid possible biases caused by factors that may influence the professionals' (but not the students') intentions and behaviour, such as those related to the culture of employing organisations. Moreover, we examine two NICs (Malaysia and the Philippines), where sustainability is considered something new and necessary to balance their

rich natural resources with rapid economic growth (Isa *et al*., 2017; Lu and Castka, 2009; Martinico-Perez *et al*., 2018), and where the higher education system is currently implementing a set of massive changes to provide higher education aligned with international standards (Ibrahim et al., 2017).

3. Research Hypotheses

3.1. Effect of HEIs sustainability concern on psychological factors

HEIs play an important role in promoting sustainability and an increasing number of stakeholders expect them to be sustainable organisations (Aleixo *et al*., 2018a). Moreover, research has found that the higher-order cognitive skills might be developed by interactions with the environment in early adulthood (Baker *et al*., 2011). Indeed, institutions mould and are moulded by human action (Hodgson, 1998) and the interaction with the university affects students' constructs of the intention (attitude, subjective norm, and perceived behavioural control). The wants and desires, the end and aim, the ways and means, the amplitude and drift of the individual's conduct are functions of institutional variables (Veblen, 1919). Just as a set of thinking habits diffuses and shapes itself as an institution that moulds behaviour, institutions can also restrict behaviour and develop new habits (Zulian, 2018).

Guided by the fact that the universities as institutions may influence accounting students' perceptions and attitudes towards environmental sustainability practices, we thus state the following hypotheses:

H1a: Studying in a HEI with a high concern for sustainability (as opposed to a low-concerned HEI), is positively associated with accounting students' attitudes towards environmental sustainability practices.

H1b: Studying in a HEI with a high concern for sustainability (as opposed to a low-concerned HEI), is positively associated with accounting students' subjective norms regarding environmental sustainability practices.

H1c: Studying in a HEI with a high concern for sustainability (as opposed to a low-concerned HEI), is positively associated with accounting students' perceived behavioural control regarding environmental sustainability practices.

3.2. Effect of psychological factors on the intention to engage in sustainability accounting

We apply the TPB to identify the psychological factors regarding environmental sustainability issues that affect students' intentions to engage in sustainability accounting, according to which attitude is a key antecedent of the intention to act (Ajzen, 1991). Earlier studies show empirically that managers' attitudes regarding sustainability practices have important implications for their intention to engage in such practices (e.g., Swaim *et al*., 2014; Yazdanpanah and Forouzani, 2015). Additionally, Thoradeniya *et al*. (2015) provide evidence on the association between the attitude and intention to engage in sustainability reporting. Therefore, we state the following hypothesis:

H2a: There is a positive association between undergraduate accounting students' attitudes towards environmental sustainability practices and their intention to engage in sustainability accounting.

The subjective norm is an individual's perception of the opinions of prominent people who can affect his/her intention to act (Ajzen, 1991). Earlier studies provide evidence for the influence of the pressure from major stakeholders on the intention to engage in sustainability practices (e.g., Swaim *et al*., 2014; Liobikienė *et al*., 2016). Additionally, Thoradeniya *et al*. (2015) and

in sustainability accounting and reporting (Kwakye *et al*., 2018). Therefore, we state the following hypothesis:

H2b: There is a positive association between the undergraduate accounting students' subjective norms regarding environmental sustainability practices and their intention to engage in sustainability accounting.

Finally, the intention to perform a specific behaviour depends on the availability of resources to act (Ajzen, 1991). The factors that facilitate or inhibit managers' control and willingness to engage in sustainability accounting include knowledge, skills, and experience, among others (Kwakye *et al*., 2018). Hasan *et al*. (2015) provide evidence that perceived behavioural control shows the strongest relationship with the behavioural intention of Malaysian students towards reducing plastic consumption, and Thoradeniya *et al*. (2015) and Kwakye *et al*. (2018) demonstrate the association between perceived behavioural control and the intention to engage in sustainability accounting. Therefore, the next hypothesis is as follows:

H2c: There is a positive association between undergraduate accounting students' perceived behavioural control towards environmental sustainability practices and their intention to engage in sustainability accounting.

4. Methodology

4.1. The context of Malaysia and the Philippines

These two countries belong to a set of countries that are usually classified as NICs, which are widely viewed as a subset of developing countries whose economic growth (usually export-oriented) is much higher than in other developing countries. NICs are shifting from primary sectors to modern sectors such as manufacturing, financial, and tourism sectors (Attiah, 2019), which, despite having economic advantages, is usually associated with negative environmental

consequences. The manufacturing firms in these countries are facing enormous challenges, namely the need to implement successful sustainability practices (Garbie, 2017). Therefore, these countries represent a good setting for investigating the determinants of accounting students' (future professionals') engagement in sustainability accounting.

Despite several governmental and non-governmental efforts that have been made to promote sustainable development in Malaysia, people typically do not yet take heed of sustainability practices (Isa *et al*., 2017). The concept of sustainability is considered something new (Lu and Castka, 2009). In the Philippines, there are also environmental policies and legal frameworks providing a basis for sustainable development, but their implementation remains a challenge (Martinico-Perez *et al*., 2018). Sustainability accounting and reporting in Malaysia and the Philippines is not extensive. In Malaysia, there is an increased need for every company to understand the reason for publishing a sustainability report (Johari and Komathy, 2019) and the Philippines just begins the sustainability reporting journey in 2020 (Villacorte, B. and Antipala, Y., 2021).

Higher education is expected to play an important role in terms of providing the manpower required to drive the economic growth in Malaysia and the Philippines in a sustainable way. The higher education system in these countries is currently implementing a set of massive changes to catch up with developed countries and provide higher education aligned with international standards (Rosaroso *et al*., 2015; Dumanig and Symaco, 2020). While HEIs in Malaysia and the Philippines are not positioned at the same level in this process of improvement and transformation (Dumanig and Symaco, 2020), this change may be an opportunity to deliver a high-standard education focused on sustainability issues.

This diversity in the higher education sector in Malaysia and the Philippines and the challenge of providing the human capital development required to drive and sustain these countries' economic growth make them a good setting to understand whether and how HEIs may influence

students' intentions to engage in sustainability accounting.

4.2. The structural model

Figure 1 illustrates the research hypotheses developed above. According to the TPB, attitude, subjective norm, and perceived behavioural control towards sustainability practices can affect the intention of students to engage in sustainability accounting, which grounds hypotheses H2a, H2b, and H2c. However, the TPB model is extended here by allowing the level of sustainability concern of the HEI (high or low) in which a student is enrolled to exert an indirect influence on students' intentions to engage in sustainability accounting through its effect on the attitude, subjective norm, and perceived behavioural control of students regarding sustainability practices. The data on the TPB variables were collected through a questionnaire, while the data on HEIs sustainability concerns were collected through a content analysis of the HEIs webpages. This bi-dimensional data collection approach reduces potential discriminant validity issues between the HEIs sustainability concern and the TPB constructs. We also control for the effect of age and gender on students' intentions to engage in sustainability accounting. [Figure 1]

4.3. The questionnaire

The data collection process began with the identification of 114 HEIs that offer accounting programmes in Malaysia or the Philippines at bachelor's and/or master's levels with sufficient information available on their web pages to support a content analysis regarding sustainability issues. Even though this is not the complete population of HEIs offering accounting degrees in the two countries, the selection was planned to be as exhaustive as possible. We then invited, in March 2018, these 114 HEIs to participate in the study, by agreeing to send the link to the questionnaire to their accounting students. Eight of them agreed to participate in the study while 106 did not respond. The participating HEIs were three universities and three polytechnics in Malaysia (HEI1 to HEI6) and two universities in the Philippines (HEI7 and HEI8).

The fact that our final sample is little representative of the full population of HEIs within the two countries, and formed by self-selected HEIs, generates the risk of response bias. However, given that the questionnaire items were only about student perceptions and intentions, and not about HEIs and their sustainability practices, we believe that the sample has a sufficient random nature so that such risk may be negligible.

The questionnaire was based on that of Swaim *et al*. (2014), it was written in English, and used the same 1-7 Likert scales and indicators (questions) to measure studentss' attitude, subjective norm, and perceived behavioural control towards sustainability practices.[1] Moreover, as in Swaim *et al*. (2014), belief-based methods (Ajzen, 1991) were applied to the subjective norm in a two-step process in which students define first the sustainability positions of their referents (here assumed to be only professors, family and friends, other students and business leaders, as pre-test respondents felt that it was inappropriate to discuss celebrities, co-workers and political leaders), and then their level of compliance with those positions. In detail, the four indicators (one per each of the referents) of the subjective norm construct were built according to the following procedure: 1) normalising to zero the scale of the answers given on the sustainability positions of their referents; 2) multiplying the normalised answers in 1) by the responses given on their willingness to comply with the positions of their referents; 3) converting the combined answers in 2) to the 1-7 scale.

Regarding the intention, the indicators were adapted to measure students' intention to engage in sustainability accounting, according to the research hypotheses H2a-H2c. To control for some personal characteristics of the students, the questionnaire also included questions regarding age, gender, type of degree, and native language. The questionnaire was pre-tested with a

[1] The 7-point Likert scale is considered the most accurate of the Likert scales and the most suitable for questionnaire measuring individual perceptions or feelings, as it considers a sufficient (and not exaggerated) number of intermediate points to give a good reflection of respondents' true perceptions (see Joshi *et al*., 2015).

set of students, allowing us to confirm that the questions were understandable, suitable for the culture of Malaysia/Philippines, and relevant.

There were 177 valid answers (the questionnaire was closed in May 2018), 104 students from Malaysia (58.76% of sample observations) and 73 from the Philippines (41.24% of sample observations). Table 1 exhibits the descriptive statistics for the questionnaire respondents.

[Table 1]

Table 2 contains the specific questions asked in the questionnaire and their selected descriptive statistics (mean and standard deviation). A first remark is that, in general, the indicators that received the highest scores are those from the attitude group, in which some items recorded a mean above 6, which reveals that accounting students in Malaysia and the Philippines are aware of environmental sustainability issues. However, it also suggests that there is still a gap between their concerns and effective actions. A second remark is that for subjective norm, there is evidence supporting that students are more willing to comply with their professors, family and friends than with their peers and business leaders, who they perceive to be less concerned with environmental sustainability issues.

[Table 2].

4.4. Measuring HEIs sustainability concern

The measuring of the latent variable HEI sustainability concern was based on a content analysis of the collaborating institutions' webpages. Efforts of HEIs to implement sustainable development have ranged from their involvement in regional development to the reduction of greenhouse gas emissions and academic leadership commitment via the inclusion of sustainable development in their mission and vision statements (Lozano *et al.*, 2015). Berzosa *et al.* (2017) bring some insights into sustainability assessment tools for higher education using different

areas such as social (e.g., working conditions, public participation, commitment to the community), curricular (e.g., syllabus, pedagogic approach, research and scholarships, training teaching staff), environmental (e.g., greenhouse emissions, waste, recycling, water) and economic (e.g., funding and investment, purchases). Also, Freidenfelds *et al.* (2018) summarized the literature in 26 indicators for sustainable and green universities, grouped in five impact categories (energy, water, transport, waste, and behaviour and management). Finally, Herzner and Stucken (2020) offer an overview of HEIs that are members of the UN Principles for Responsible Management Education (UN PRME), as well as of how they conduct their sustainability activities. UN PRME encourage sustainability leadership within HEIs and offer different content directions: "Working through Six Principles, PRME engages business and management schools to ensure they provide future leaders with the skills needed to balance economic and sustainability goals, while drawing attention to the Sustainable Development Goals (SDGs) and aligning academic institutions with the work of the UN Global Compact" (https://www.unprme.org/).

More specific measures were suggested by Velazquez *et al*. (2006), Nejati and Nejati (2013), Labanauskis (2017), and Aleixo *et al*. (2018b), who give insights into the key dimensions of a sustainable university. Nejati and Nejati (2013) investigate the perceptions of major stakeholders within the university setting on the university's role in contributing to sustainability and develop a reliable scale to assess universities' sustainability practices. A four-dimensional structure for the key dimensions of a sustainable university was identified, including 1) community outreach, 2) sustainability commitment and monitoring, 3) waste and energy, and 4) land use and planning. For Labanauskis (2017), the key dimensions of a sustainable university are strategic management, curriculum, study programmes, teaching methods, campus operations, research and development, commercialisation of research, and contribution to society.

Our content analysis was based on the dimensions above and restricted to the information disclosed by the collaborating HEIs in the academic year of 2017/2018. It was operationalised through the construction of seven binary indicators, as described in Table 3.

[Table 3]

The indicators were constructed as single classification measures (high or low) to minimize the effects of possible measurement errors on the underlying variables extracted from the content analysis. The specific cut-off points were chosen to impose variability in the sample, by splitting it as evenly as possible.

Additionally, within each indicator, the counting was made concerning the HEIs as a whole and not only concerning the accounting departments. While the latter might better represent the possible direct influence of the HEIs on accounting students, such a restriction could bias the measurement of the HEIs sustainability concern level. Moreover, even though sustainability initiatives occur in different departments, they are expected to have an indirect effect on accounting students.

Table 4 presents the results of the classification process conducted within the content analysis, which culminated in a final classification of “High” or “Low” level of sustainability concern for each HEI. The HEIs with a majority (four or more) of “High” binary indicators were classified as a "High sustainability-concerned HEI”, while the HEIs with a majority of "Low" binary indicators were classified as a "Low sustainability-concerned HEI”. The application of this rule implied that two Malaysian HEIs and one Philippine HEI were classified as "High sustainability-concerned" (representing a total of 66 student observations, 57 from Malaysia and 9 from the Philippines) and that four Malaysian HEIs and one Philippine HEI were classified as “Low sustainability-concerned” (with a total of 111 student observations, 47 from Malaysia and 64 from the Philippines). The resulting partition of the HEIs was converted into a

binary variable at the student level, to be used in model estimations, with 1 standing for students enrolled in a high sustainability concerned HEI and 0 for the opposite situation.

[Table 4]

Table 5 exhibits selected descriptive statistics (sample means and correlations) of the baseline binary indicators, computed at the student level.

[Table 5]

Note that the HEIs in the sample show better average results in the indicators air quality, research, projects, and greenery, and poorer results in the indicators courses, students, and professors. Moreover, even though most of the indicators are positively correlated, some of them are not significantly correlated or are negatively correlated, which reveals that each indicator has its independent contribution to the HEIs level of sustainability concern. The strongest positive correlations were obtained between courses, students, and greenery, which suggests, for example, that the schools with more courses on sustainability topics are also the ones involved in more projects on sustainability for society with student participation.

5. Results

In this section, we describe the results following a two-step approach. First, we engage in confirmatory factor analysis (CFA) to verify whether the questionnaire indicators measure the associated latent variables with reliability and validity. Secondly, we estimate and validate the structural model developed in the previous section, and assess the paths between the constructs, validating or not the research hypotheses.

Tables 6 and 7 display the CFA results. Table 6 exhibits the correlations between the TPB constructs, and between them and the HEIs sustainability concern and control variables (age

and gender). Table 7 exhibits the results on the reliability and validity of the measurement of the TPB constructs.

[Table 6]

[Table 7]

In Table 6, we see that all TPB constructs are strongly and positively correlated. In general, the HEIs sustainability concern variable is positively correlated with the TPB variables as well. Concerning the control variables, older students seem to exhibit lower intentions to engage in sustainability accounting, while gender appears not to be directly associated with such intentions.

Table 7 confirms that the questionnaire items indeed measure the underlying latent constructs with reliability and validity (the unitary weight item was considered by default to be the first one in each construct), as all factor loadings and average variance extracted exceeded 0.7, and all composite reliabilities were greater than or equal to 0.89. However, note that some survey items were dropped due to low factor loadings (A2, S4, P1, P3, and I4) in the validated version of the model. The overall fit indices demonstrated a satisfactory match between the data and model: $\chi^2/df = 2.474$, NFI = 0.918, CFI = 0.949, TLI = 0.929, RMSEA = 0.092.

Finally, Figure 2 presents the results that were obtained from the estimation of the validated structural model and assessment of the paths representing the research hypotheses and the effect of the control variables on students' intentions to engage in sustainability accounting. The fit indices reveal an acceptable adjustment between the data and the model: $\chi^2/df = 2.586$, NFI = 0.905, CFI = 0.939, TLI = 0.923, RMSEA = 0.095.

[Figure 2]

The paths from the HEIs sustainability concern variable to the constructs attitude and perceived behavioural control are significant (at 0.1 and 0.05 significance levels), thereby validating hypotheses H1a and H1c. Hypothesis H1b is not validated as the correspondent p-value is 0.2. The paths from subjective norm and perceived behavioural control to intention are both strongly significant, thus confirming H2b and H2c, while the path from attitude to intention is not significant, which gives no support to hypothesis H2a.

Concerning the control variables, older and/or male students are shown to have significantly lower intentions to engage in sustainability accounting than their younger and/or female counterparts. Older students having lower intentions to engage in sustainability accounting reveals that there is still much to do about in these countries about embedding sustainability issues in academic curricula. Like in many other countries, business and accounting students are still essentially trained to make decisions under an economic rationale, with little considerations regarding sustainability, which may contribute to decreasing their perceptions towards sustainability with time. Female students having higher intentions to engage in sustainability accounting than male students may come from women being more sensitive to sustainability issues than men, which is widely documented in the literature.

Additionally, and more importantly, our results reveal that raising the HEIs level of concern with sustainability in these countries contributes to increasing accounting students' intentions to engage in sustainability accounting in the future, particularly through its positive effect on the perceived behavioural control of students towards environmentally sustainable practices.

Differences between the influence of the HEIs in Malaysia and the Philippines

To assess the robustness of the results regarding the possible differences between the two countries under study, we re-estimate the model after dividing the variable "High HEIs sustainability

concern" into two different binary variables, one identifying the students from the high sustainability-concerned HEIs in Malaysia and the other identifying the students from the high sustainability-concerned HEIs in the Philippines. Naturally, the sum of these two new variables is the overall HEIs sustainability concern variable.

[Figure 3]

Figure 3 shows the results obtained, with the main additional finding that within the Philippines, the positive (and indirect) effect of the HEIs sustainability concern on students' intentions to engage in sustainability accounting may also occur through the subjective norm intermediator. A possible explanation for this difference could be the lower level of economic and human development of the Philippines relative to Malaysia, which may be associated with a more significant role of educators as disseminators of good practices.

6. Discussion and conclusions

This empirical study shows that multiple factors affect students' intentions to engage in sustainability accounting in Malaysia and the Philippines. More specifically, this intention seems to be strongly affected by students' subjective norms and perceived behavioural control towards environmental sustainability practices. It seems that the more referents towards environmental sustainability practices, as professors, family/friends, and other students (subjective norm) and the more skills and resources students have to be environmentally responsible (perceived behaviour control), the more likely they will engage in sustainability accounting.

Contrary to most of the literature, attitude was found to be irrelevant to students' intention to engage in sustainability accounting. This is probably related to the cultural background of Malaysia and the Philippines. Hofstede (2011) identifies these countries as having a high level of collectivism, where people are integrated since birth into strong cohesive in-groups, which continue to protect them throughout their lifetime in exchange for unquestioning loyalty (Hofstede

et al., 2010). Therefore, even when believing that something must change, people may not have the intention to modify their behaviour given that, as simple individuals, they lack the necessary power, resources, and instruments to do so. To modify their behaviour, they need to see their referents doing it first and they must also be given sufficient resources to do it.

Our finding that attitude towards sustainability practices is not relevant for students' intention to engage in sustainability accounting in Malaysia and the Philippines is consistent with Hasan *et al*. (2015) though, who show that the intention to reduce plastic consumption amongst Malaysian university students is mostly influenced by perceived behavioural control. Also, our finding is consistent with Kwakye *et al*. (2018), who found that only subjective norms and perceived behavioural control affect professional accountants' intention to engage in sustainability accounting in Ghana, another country scored by Hoftede (2011) with a high level of collectivism.

Regarding the most innovative aspect of our model, we found robust evidence of a positive relationship between the sustainability concern level of the HEI in which a student is enrolled and his/her attitude, subjective norm (in the case of the Philippines), and perceived behavioural control towards environmental sustainability practices, and, indirectly, his/her intention to engage in sustainability accounting. This provides directions for an effective educational policy development addressing sustainability issues.

These results support the importance of including sustainability topics in curricula in higher education courses on accounting within a traditional didactic notion, as well as of the key role of more disruptive and open-minded teaching methodologies, recommended by Gray (2019), such as the collaborative participation of students in institutional sustainability projects for the society or in their professors' research or consulting projects.

From a different angle, the results reported here can be interpreted as extending the finding in Thoradeniya *et al*. (2015) that normative beliefs and subjective norms of business managers can be influenced by their level of education. While they show that a greater "quantity" of education may contribute to an increase in the intention to engage in sustainability reporting, here it is shown that the "quality" of education (more intensive in sustainability courses and projects and using more sustainability-oriented professors, on a more sustainable campus) is also relevant, and through all behavioural, normative and control paths.

The main limitation of this study is the fact that the data was collected at a single period, and it treated equally students that are at different stages of their academic progression. However, one would expect that the influence exerted by HEIs increases continuously with enrolment time and academic progression, and therefore, that students near completion are more influenced by their HEIs than first-year students. An opportunity for future extension of this study would be to use longitudinal data and gain more insight into how the influence of HEIs evolves during their academic progression.

Also, beyond the environmental component, it would be important to include social and economic aspects of sustainability in the analysis, which could give more complete insights into accounting students' perceptions on sustainability issues and into the influence of HEIs on such perceptions.

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